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09/903,825	07/11/2001	Robert E. Duthie JR.	35553.0000	1397

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/903,825
Filing Date: July 11, 2001
Appellant(s): DUTHIE, ROBERT E.

Martin G. Linihan
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 8 September 2005 appealing from the Office action mailed 2 February 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4,963,750	WILSON	10-1990
5,547,635	DUTHIE, JR.	08-1996

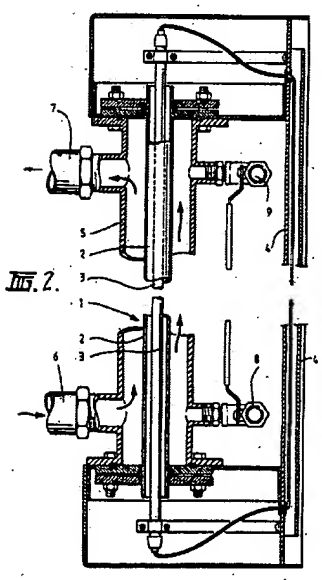
Although the "Evidence Appendix" is missing in the Brief, the examiner assumes that appellant meant to include this appendix with a statement of "NONE."

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (U.S. Patent No. 4,963,750) in view of Duthie, Jr. (U.S. Patent No. 5,547,635).

Wilson teaches an apparatus for the sterilization of fluids wherein the apparatus includes



ultraviolet lamp **3** within quartz enclosure **2** and a vessel **5** containing the lamp and enclosure, wherein the vessel has a fluid inlet **6** and fluid outlet **7**, located at opposite ends of the vessel. As shown in Figure 2, the diameter of the vessel **5** is about twice the diameter of the enclosure **2**, and the diameter of the enclosure **2** is about twice the diameter of the lamp **3**. Wilson does not teach that the lamp is a mercury/gallium metal halide lamp or that the envelope and enclosure are ozone-free metallic doped quartz.

Duthie, Jr. discloses a mercury/gallium metal halide UV lamp which emits UV radiation in the range of 175-400 nm. See col.2, lines 40-50. The lamp is housed within a titanium-doped quartz tubing "of the type which transmits little or no radiation below 200 nanometers, i.e. ozone-free quartz" (col.6, lines 7-10). Duthie, Jr. further teaches that the lamp may be constructed in the form of a straight tube and is suitable for fluid sterilization. See col.6, lines 5 and 13-18; col.11, lines 62-64. As Duthie, Jr. discloses that the mercury/gallium metal halide lamp within the metallic doped quartz envelope provides a dynamic sterilization not provided by ordinary UV lamps and in fact, "is capable of penetrating and causing excitation of molecules on the surface, therefore not requiring the amount of energy commonly associated with traditional ultraviolet methods" (col.4, lines 38-65), it would have been obvious to substitute the UV lamp and envelope of Duthie, Jr. for that of Wilson. As to the lamp operating temperature, Duthie, Jr. teaches that the U-shaped UV bulb operates at a measured temperature of 475 °F (col.10, line 51). However, this bulb temperature is measured while the bulb is cooled by fan **66** (col.5, lines 38-40). It is further noted that while Appellant discloses using the bulb and circuit of Duthie, Jr., no unexpected results are disclosed as an effect of the operating temperature. The Examiner submits that the bulb operating temperature is an intrinsic property of the dynamic sterilization lamp and circuit and when using a non-cooled, straight bulb configuration in the combination of Wilson with Duthie, Jr., the bulb temperature would have been within the claimed range. Moreover, one would have found it obvious to substitute the metallic doped quartz material of Duthie, Jr. for the quartz enclosure material of Wilson, since Duthie, Jr. teaches that the titanium-doped quartz tubing "transmits little or no radiation below 200 nanometers, i.e. ozone-free quartz" and thus "avoids potential hazards associated with ozone."

(10) Response to Argument

On page 4 of the Brief, appellant argues that "Wilson does not disclose an apparatus for disinfection/pasteurization. Wilson discloses only sterilization, and applicant can find no reference to disinfection/pasteurization in the Wilson patent." In response, the examiner notes that with respect to the apparatus, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987). Thus, as the apparatus of Wilson with Duthie, Jr. meets each and every limitation of the apparatus claims, the claims of the instant invention are rendered obvious.

With respect to the method of disinfection/pasteurization, appellant states on page 4 of the Brief that "since there is a clear difference between sterilization and disinfection...there would be no motivation for one skilled in the art to look to Wilson when addressing a problem in the field of disinfection/pasteurization." The examiner respectfully disagrees with this reasoning. As is known in the art, sterilization relates to the complete destruction of all microorganisms, including spores (dormant bacteria). Disinfection/pasteurization achieves the destruction or inactivation of the growing forms of microorganisms, but not necessarily spores. Thus, the apparatus and method of Wilson achieve a *higher level* of microorganism destruction than the present invention. Thus, a method of sterilization *encompasses* a method of disinfection because a method of sterilization achieves the destruction or inactivation of the growing forms of microorganisms. Therefore, one of ordinary skill in the art would certainly be motivated to look

to Wilson when addressing a problem in the field of disinfection/pasteurization because Wilson teaches the destruction of both growing and dormant forms of microorganisms.

On page 5 of the Brief, appellant submits that the combination of Wilson with Duthie, Jr. fails to teach the claimed invention since Duthie, Jr. discloses only the lamp is enclosed within an envelope (and no secondary "enclosure") and because the tube (enclosure **2**) employed by Wilson is provided with an outer sleeve of TEFLON. Appellant further submits that "Wilson appears to teach against quartz tubes at the top of column 2 of his patent."

In response, the examiner notes that the combination of Wilson with Duthie, Jr. results (a) in the substitution of the mercury/gallium metal halide UV lamp enclosed with the ozone free metallic doped quartz envelope for the conventional UV lamp and envelope used by Wilson, and (b) the substitution of metallic doped quartz for the conventional quartz in the enclosure of Wilson. Moreover, the use of an outer sleeve of TEFLON on the enclosure of Wilson does not teach away a combination with Duthie, Jr., as the two are not mutually exclusive. It would have been obvious to provide the TEFLON sleeve of Wilson over the metallic doped quartz envelope to reduce fouling or alternately, to simply omit the TEFLON sleeve altogether when fouling is less of an issue. It is noted that the invention of Wilson is not destroyed in any way when omitting the TEFLON sleeve. The apparatus of Wilson will sterilize fluid media whether or not the TEFLON sleeve is present on the enclosure.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Although the "Related Proceedings Appendix" is missing in the Brief, the examiner assumes that appellant meant to include this appendix with a statement of "NONE."

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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